



**Deep Direct-Use Feasibility Studies**  
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**FOA Webinar**  
**DE-FOA-0001601**  
**11/22/2016**

**[Insert FOA Number]**  
**[insert FOA Title]**

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Anticipated Schedule:

<b>FOA Issue Date:</b>	<b>11/15/2016</b>
<b>FOA Informational Webinar:</b>	11/22/2016
<b>Submission Deadline for Concept Papers:</b>	12/15/2016
<b>Submission Deadline for Full Applications:</b>	2/22/2017
<b>Submission Deadline for Replies to Reviewer Comments:</b>	3/27/2017
<b>Expected Date for EERE Selection Notifications:</b>	May 2017
<b>Expected Timeframe for Award Negotiations:</b>	May-June 2017

# Notice

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- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement DE-FOA-0001601 (“FOA”) and adhere to the stated submission requirements.
- This presentation summarizes the contents of FOA. If there are any inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document and applicants should rely on the FOA language and seek clarification from EERE.
- If you believe there is an inconsistency, please contact [DDUFOA1601@ee.doe.gov](mailto:DDUFOA1601@ee.doe.gov).

# Agenda

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- 1) FOA Description
- 2) Topic Areas/Technical Areas of Interest
- 3) Award Information
- 4) Statement of Substantial Involvement
- 5) Cost Sharing
- 6) Concept Papers
- 7) Full Applications
- 8) Merit Review and Selection Process
- 9) Registration Requirements

# FOA Description

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**OBJECTIVE:** Through this Funding Opportunity Announcement (FOA) The U.S. Department of Energy (DOE) Geothermal Technologies Office (GTO) seeks to conduct feasibility studies of large-scale, low-temperature deep-well geothermal systems coupled with advanced direct-use applications and cascaded surface technologies whose applications will extend the reach of geothermal into geologically distinct parts of the country beyond the western U.S. These systems are referred to herein as deep direct-use or DDU. Feasibility studies funded under this FOA will support subsequent geothermal direct-use applied research and analysis projects, also known as renewable thermal applications, which seek to harvest heat from geothermal brines and use it to directly heat (or cool) buildings, as well as for other beneficial thermal processes. By displacing high-temperature power generation with low-to-medium temperature geothermal fluids, significant energy conservation gains can be achieved for end-use processes with moderate temperature requirements. Direct-use geothermal applications have the potential to provide cost-effective, renewable thermal energy in large portions of the U.S.

# FOA Description

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OVERVIEW: The concept for DDU is to engineer large-scale, multi-application geothermal direct-use projects that can replace or be installed in lieu of conventional district heating and cooling systems; along with other cascading thermal applications such as water heating, ice making, laundry drying, pool and sauna heating, etc. If the geothermal resource temperature is sufficient, the system could also be a combined heat and power (CHP) application, with the fluid generating power from a binary unit(s) prior to the direct-use applications.

## Topic Areas/Technical Areas of Interest

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This FOA is comprised of two topic areas. Topic Area 1 “DDU Feasibility Assessment” consists of establishing criteria and then modeling/analyzing results to determine the techno-economic feasibility of potential deep direct-use sites. Topic Area 2 “DDU Community of Practice Administration and Techno-Economic Validation of DDU Projects” is seeking a competent professional or team of professionals to benchmark DDU project data and provide broad outreach regarding awards made under Topic Area 1.

# Topic Areas/Technical Areas of Interest

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## FOA Topic Area 1: DDU Feasibility Studies

This topic area will focus on the initial site selection, resource assessment, and feasibility study of DDU technology(s). Responses in this area should outline a detailed approach to completing an in depth feasibility study of a potential site to include planned thermal demands for the proposed location with supporting techno-economic analysis and detail of the thermal application. One significant anticipated outcome of the FOA will be to match low-temperature geothermal resources with thermal end-uses, expanding the reach of geothermal applications to regions of the country with temperatures below current technical capabilities for geothermal power generation. EERE anticipates making approximately 4-15 awards under Topic Area 1. Individual awards in Topic Area 1 may vary between \$240,000 and \$900,000 and be up to 24 months in length.

# Topic Areas/Technical Areas of Interest

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## **FOA Topic Area 2: DDU Community of Practice Administration and Techno-Economic Validation of DDU Projects**

DOE will select one Community of Practice Administrator (COPA) under this Topic Area to convene and establish a DDU Community of Practice (COP). The COPA will select models for assessing the technical and economic potential and will rank the feasibility of DDU projects. DOE will serve as ex officio heads of the COPA and will provide confirmation and validation of the criteria. DOE will *not* establish the criteria for communities of practice prior to FOA release. The selected COPA will work with Topic Area 1 awardees.

Responses in this topic area will include three (3) budget periods with each being one year in length. EERE anticipates making 1 award under Topic Area 2 totaling up to \$350,000 in federal share. Budget Period 1 will focus on initiating all activities outlined in the proposal necessary to establish a COP and includes outreach and collaboration with Topic Area 1 awardees to determine appropriate Topic Area 1 models/tools to be utilized, input criteria to be submitted, desired output metrics and model assumptions both cumulatively and in each Topic Area 1 Section. This will be done to ensure uniformity and best practices are established and utilized by all Topic Area 1 awardees. Budget Period 2 will focus on implementation of the modeling and validation of the results. Budget Period 3 will focus on implementation, final validation of project results, and reporting also as described in the proposal.

# Non-Responsive Applications

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The following types of applications will be deemed nonresponsive and will not be reviewed or considered for an award:

- Applications that fall outside the technical parameters specified in Section I.B of the FOA, including but not limited to :
  - Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the law of thermodynamics).
  - Applications that apply exclusively to power production rather than applications that consider cascading direct geothermal from power production
  - Applications for Combined Heat and Power that do not utilize geothermal resources
  - Applications that propose demonstration projects.
  - Applications that propose basic research.
  - Applications for engineering validation that do not include sufficient amounts of materials tested to conduct a meaningful techno-economic analysis.

# Award Information

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<b>Total Amount to be Awarded</b>	\$4,000,000*
<b>Average Award Amount</b>	EERE anticipates making awards that range from \$240,000 to \$900,000 for Topic Area 1 and up to \$350,000 for Topic Area 2.
<b>Types of Funding Agreements</b>	Cooperative Agreements, Grants, Technology Investment Agreements, Work Authorizations, and Interagency Agreements
<b>Period of Performance</b>	Up to 24 months for Topic Area 1 and up to 36 months for Topic Area 2
<b>Cost Share Requirement</b>	20% of Total Project Costs

\*Subject to the availability of appropriated funds

# Statement of Substantial Involvement

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EERE has substantial involvement in work performed under Awards made following this FOA. EERE does not limit its involvement to the administrative requirements of the Award. Instead, EERE has substantial involvement in the direction and redirection of the technical aspects of the project as a whole. Substantial involvement includes, but is not limited to, the following:

- EERE shares responsibility with the Recipient for the management, control, direction, and performance of the Project.
- EERE may intervene in the conduct or performance of work under this Award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
- EERE may redirect or discontinue funding the Project based on the outcome of EERE's evaluation of the Project at that the Go/No Go decision point.
- EERE participates in major project decision-making processes.
- As specified under Topic Area 2, DOE will serve as ex officio heads of the Community of Practice and will provide confirmation and validation of the criteria used to evaluate the projects selected under Topic Area 1.

# Cost Sharing Requirements

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- Applicants must contribute a minimum of 20% of the total project costs for R&D projects. *Unless the project qualifies for the Cost Share Reduction.*
- **Cost Share Reduction:** EERE has reduced the Recipient Cost Share Requirement to **10%** for R&D activities where:
  - The Prime Recipient is a domestic institution of higher education; domestic nonprofit entity; FFRDC; or U.S. State, local, or tribal government entity; and
  - The Prime Recipient performs more than 50% of the project work, as measured by the Total Project Cost

# Cost Share Contributions

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- Contributions must be:
  - Specified in the project budget
  - Verifiable from the Prime Recipient's records
  - Necessary and reasonable for proper and efficient accomplishment of the project
- Every cost share contribution must be reviewed and approved in advance by the Contracting Officer and incorporated into the project budget before the expenditures are incurred

# Allowable Cost Share

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- Cost Share must be allowable and must be verifiable upon submission of the Full Application
- Refer to the following applicable Federal cost principles:

Entity	Cost Principles
For-profit entities	FAR Part 31
All other non-federal entities	2 CFR Part 200 Subpart E - Cost Principles

# Allowable Cost Share

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- Cash Contributions
  - May be provided by the Prime Recipient, Subrecipients, or a Third Party
- In-Kind Contributions
  - Can include, but are not limited to: personnel costs, indirect costs, facilities and administrative costs, rental value of buildings or equipment, and the value of a service, other resource, or third party in-kind contribution

# Unallowable Cost Share

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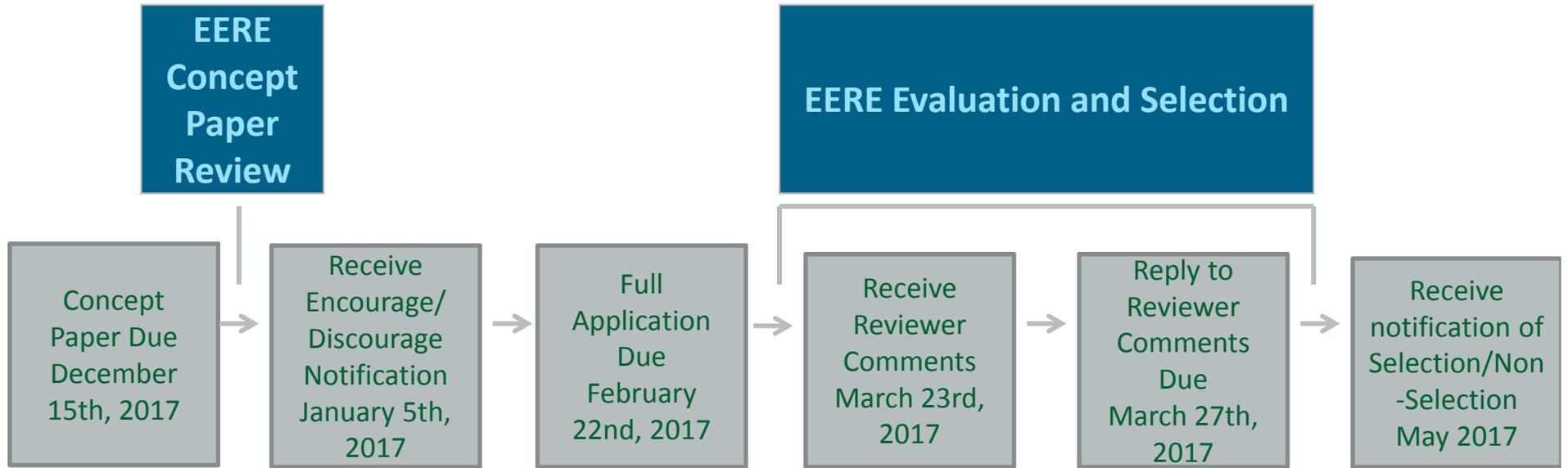
- The Prime Recipient may not use the following sources to meet its cost share obligations including, but not limited to:
  - Revenues or royalties from the prospective operation of an activity beyond the project period
  - Proceeds from the prospective sale of an asset of an activity
  - Federal funding or property
  - Expenditures reimbursed under a separate Federal Technology Office
  - Independent research and development (IR&D) funds
  - The same cash or in-kind contributions for more than one project or program

# Cost Share Payment

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- Recipients must provide documentation of the cost share contribution, incrementally over the life of the award
- The cumulative cost share percentage provided on each invoice must reflect, at a minimum, the cost sharing percentage negotiated
- In limited circumstances, and where it is in the government's interest, the EERE Contracting Officer may approve a request by the Prime Recipient to meet its cost share requirements on a less frequent basis, such as monthly or quarterly. See Section III.B.6 of the FOA.

# FOA Timeline



EERE anticipates making awards by June 2017

# Concept Papers

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- Applicants must submit a Concept Paper
  - Each Concept Paper must be limited to a single concept or technology
- The Concept Paper must include a technology description (See Section IV.C of the FOA)
  - The technology description is limited to 2 pages
  - The Concept Paper can also include graphs, charts, or other data (limited to 3 pages)
- Concept Papers must be submitted by December 15<sup>th</sup>, 2016, 5:00pm ET, through EERE Exchange, and must comply with the content and form requirements in Section IV.C of the FOA
- EERE provides applicants with: (1) an “encouraged” or “discouraged” notification, and (2) the reviewer comments

# Concept Paper Review

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EERE evaluates the Concept Papers based on the following technical review criteria:

- **Criterion 1: Concept Paper Criterion: Overall FOA Responsiveness and Viability of the Project (Weight: 100%)**

This criterion involves consideration of the following factors:

- The applicant clearly describes the proposed technology, describes how the technology is unique and innovative, and how the technology will advance the current state-of-the-art;
- The applicant has identified risks and challenges, including possible mitigation strategies, and has shown the impact that EERE funding and the proposed project would have on the relevant field and application;
- The applicant has the qualifications, experience, capabilities and other resources necessary to complete the proposed project; and
- The proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA.

# Full Applications

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- The Full Application includes:
  - **Technical Volume:** The key technical submission - info relating to the technical content, project team members, etc.
  - **SF-424 Application for Federal Assistance:** The formal application signed by the authorized representative of the applicant.
  - **SF-424A Budget & Budget Justification:** a detailed budget and spend plan for the project.
  - **Summary for Public Release**
  - **Summary Slide**
  - **Administrative Documents:** E.g., U.S. Manufacturing Plan, FFRDC Authorization (if applicable), Disclosure of Lobbying Activities, etc

# Full Applications: Technical Volume Content

- **Technical Volume: the key technical component of the Full Application**

Content of Technical Volume	Suggested % of Technical Volume
Cover Page	
Project Overview	10%
Technical Description, Innovation and Impact	25%
Workplan	50%
Technical Qualifications and Resources	15%
FOA Specific Requirements	

# Full Application Eligibility Requirements

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- Applicants must submit a Full Application by February 22nd, 2017
- Full Applications are eligible for review if:
  - The Applicant is an eligible entity Section III.A of FOA;
  - The Applicant submitted an eligible Concept Paper;
  - The Cost Share requirement is satisfied Section III.B of FOA;
  - The Full Application is compliant Section III.C of FOA; and
  - The proposed project is responsive to the FOA Section III.D of FOA
  - The Full Application meets any other eligibility requirements listed in Section III of the FOA.

# Who's Eligible to Apply?

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Eligible applicants for this FOA include:

1. Individuals
2. Domestic Entities
3. Foreign Entities
4. Incorporated Consortia
5. Unincorporated Consortia

For more detail about each eligible applicant, please see Section III.A of the FOA for eligibility requirements

Nonprofit organizations described in Section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995, are not eligible to apply for funding.

# Multiple Applications

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Applicants may submit more than one application to this FOA, provided that each application describes a unique, scientifically distinct project

# Merit Review and Selection Process (Full Applications)

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- The Merit Review process consists of multiple phases that each include an initial eligibility review and a thorough technical review
- Rigorous technical reviews are conducted by reviewers that are experts in the subject matter of the FOA
- Ultimately, the Selection Official considers the recommendations of the reviewers, along with other considerations such as program policy factors, to make the selection decisions

# Technical Merit Review Criteria- Topic Area 1

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<b>Criterion 1: Thermal Resource and Site Suitability</b>	<b>Weight: 25%</b>
<b>Criterion 2: Energy End Use Potential, Market Demand, and Market Transformation</b>	<b>Weight: 25%</b>
<b>Criterion 3: Proposed Technology</b>	<b>Weight: 25%</b>
<b>Criterion 4: Methods for Estimating Project Costs and Benefits</b>	<b>Weight: 15%</b>
<b>Criterion 5: Project Organization, Approach, Management, Teaming and Resources</b>	<b>Weight: 10%</b>

## Technical Merit Review Criteria- Topic Area 2

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<b>Criterion 1: Ability to Establish and Benchmark Communities of Practice</b>	<b>Weight: 20%</b>
<b>Criterion 2: Techno-Economic Validation of DDU Feasibility Analysis</b>	<b>Weight: 20%</b>
<b>Criterion 3: Metrics and Data Sharing</b>	<b>Weight: 20%</b>
<b>Criterion 4: National Technological Innovation and Data Sharing Recognition and Outreach</b>	<b>Weight: 20%</b>
<b>Criteria 5: Local Benefits and Sustainability of DDU Projects</b>	<b>Weight: 10%</b>

# Replies to Reviewer Comments

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- EERE provides applicants with reviewer comments
- Applicants are not required to submit a Reply - it is optional
- To be considered by EERE, a Reply must be submitted by March 27th, 2017 at 5:00pm ET and submitted through EERE Exchange
- Content and form requirements:

Section	Page Limit	Description
Text	2 pages max	Applicants may respond to one or more reviewer comments or supplement their Full Application.
Optional	1 page max	Applicants may use this page however they wish; text, graphs, charts, or other data to respond to reviewer comments or supplement their Full Application are acceptable.

# Selection Factors

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The Selection Official may consider the merit review recommendation, program policy factors, and the amount of funds available in arriving at selections for this FOA

# Program Policy Factors

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- The Selection Official may consider the following program policy factors in making his/her selection decisions:
  - Whether deep direct-use proposals serve energy end-uses that provide a broad public interest such as education, medical care, national defense or environmental protection.
  - Whether project teams leverage federal, state, or local plans, goals or strategies that target utilization of geothermal or renewable thermal resources.
  - Whether project teams leverage or coordinate with Federal, State, or local research and development authorities or other entities responsible for approving new energy research, development and demonstration in the proposed jurisdiction
  - The level of industry involvement and demonstrated ability to advance direct-use related technologies.
  - Whether the proposed project is likely to lead to increased employment and manufacturing in the United States;
  - Whether the proposed project will accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty
  - Whether the proposed geographical area(s) includes high population density and/or high thermal energy demand that is also geographically coincident with known or anticipated elevated subsurface temperatures.

# Registration Requirements

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- To apply to this FOA, Applicants must register with and submit application materials through EERE Exchange: <https://eere-Exchange.energy.gov>
- Obtain a “control number” at least 24 hours before the first submission deadline
- Although not required to submit an Application, the following registrations must be complete to received an award under this FOA:

Registration Requirement	Website
DUNS Number	<a href="http://fedgov.dnb.com/webform">http://fedgov.dnb.com/webform</a>
SAM	<a href="https://www.sam.gov">https://www.sam.gov</a>
FedConnect	<a href="https://www.fedconnect.net">https://www.fedconnect.net</a>
Grants.gov	<a href="http://www.grants.gov">http://www.grants.gov</a>

# Means of Submission

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- Concept Papers, Full Applications, and Replies to Reviewer Comments must be submitted through EERE Exchange at <https://eere-Exchange.energy.gov>
  - EERE will not review or consider applications submitted through other means
- The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements can be found at <https://eere-Exchange.energy.gov/Manuals.aspx>

# Key Submission Points

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- Check entries in EERE Exchange
  - Submissions could be deemed ineligible due to an incorrect entry
- EERE strongly encourages Applicants to submit 1-2 days prior to the deadline to allow for full upload of application documents and to avoid any potential technical glitches with EERE Exchange
- Make sure you hit the submit button
  - Any changes made after you hit submit will un-submit your application and you will need to hit the submit button again
- For your records, print out the EERE Exchange Confirmation page at each step, which contains the application's Control Number

# Applicant Points-of-Contact

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- Applicants must designate primary and backup points-of-contact in EERE Exchange with whom EERE will communicate to conduct award negotiations
- It is imperative that the Applicant/Selectee be responsive during award negotiations and meet negotiation deadlines
  - Failure to do so may result in cancellation of further award negotiations and rescission of the Selection

# Questions

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- Questions about this FOA? Email [DDUFOA1601@ee.doe.gov](mailto:DDUFOA1601@ee.doe.gov)
  - All Q&As related to this FOA will be posted on EERE Exchange
    - You must select this specific FOA Number in order to view the Q&As
  - EERE will attempt to respond to a question within 3 business days, unless a similar Q&A has already been posted on the website
- Problems logging into EERE Exchange or uploading and submitting application documents with EERE Exchange? Email [EERE- ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov).
  - Include FOA name and number in subject line